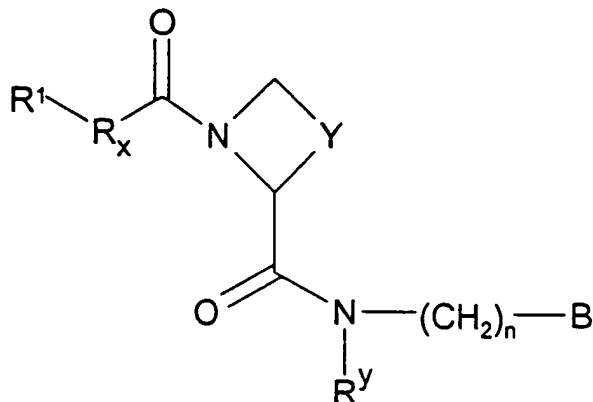


**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 (currently amended). A compound of formula I,



wherein

R<sup>1</sup> represents H, C<sub>1-4</sub> alkyl (optionally substituted by one or more substituents selected from cyano, halo, OH, C(O)OR<sup>1a</sup> or C(O)N(R<sup>1b</sup>)R<sup>1c</sup>) or OR<sup>1d</sup>;

R<sup>1d</sup> represents H, C(O)R<sup>11</sup>, SiR<sup>12</sup>R<sup>13</sup>R<sup>14</sup> or C<sub>1-6</sub> alkyl, which latter group is optionally substituted or terminated by one or more substituent selected from OR<sup>15</sup> or (CH<sub>2</sub>)<sub>q</sub>R<sup>16</sup>;

R<sup>12</sup>, R<sup>13</sup> and R<sup>14</sup> independently represent H, phenyl or C<sub>1-6</sub> alkyl;

R<sup>16</sup> represents C<sub>1-4</sub> alkyl, phenyl, OH, C(O)OR<sup>17</sup> or C(O)N(H)R<sup>18</sup>;

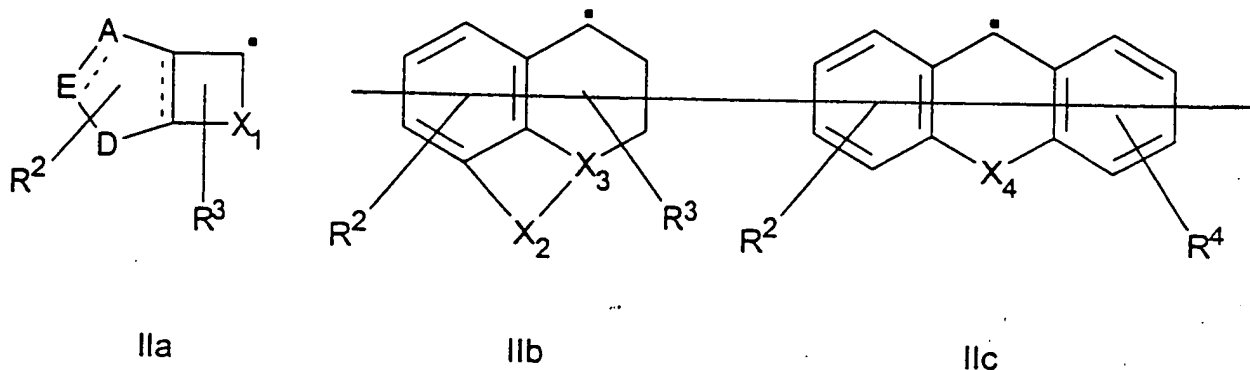
R<sup>18</sup> represents H, C<sub>1-4</sub> alkyl or CH<sub>2</sub>C(O)OR<sup>19</sup>;

R<sup>15</sup> and R<sup>17</sup> independently represent H, C<sub>1-6</sub> alkyl or C<sub>1-3</sub> alkylphenyl;

R<sup>1a</sup>, R<sup>1b</sup>, R<sup>1c</sup>, R<sup>11</sup> and R<sup>19</sup> independently represent H or C<sub>1-4</sub> alkyl; and

q represents 0, 1 or 2;

R<sub>x</sub> represents a structural fragment of formula IIa, IIb or IIc,



wherein

the dotted lines independently represent optional bonds;

A and E independently represent O or S, CH or CH<sub>2</sub> (as appropriate), or N or N(R<sup>21</sup>) (as appropriate);

D represents ~~CH<sub>2</sub>, O, S, N(R<sup>22</sup>), (CH<sub>2</sub>)<sub>2</sub>, CH=CH, CH<sub>2</sub>N(R<sup>22</sup>), N(R<sup>22</sup>)CH<sub>2</sub>, CH=N, N=CH, CH<sub>2</sub>O, OCH<sub>2</sub>, CH<sub>2</sub>S or SCH<sub>2</sub>;~~

X<sub>1</sub> represents ~~G<sub>2-4</sub> alkylene; G<sub>2-3</sub> alkylene interrupted by Z; C(O)-Z-A<sup>1</sup>; Z-C(O)-A<sup>1</sup>; CH<sub>2</sub>-C(O)-A<sup>1</sup>; Z-C(O)-Z-A<sup>2</sup>; CH<sub>2</sub>-Z-C(O)-A<sup>2</sup>; Z-CH<sub>2</sub>-C(O)-A<sup>2</sup>; Z-CH<sub>2</sub>-S(O)<sub>m</sub>-A<sup>2</sup>; C(O)-A<sup>3</sup>; Z-A<sup>3</sup>; or A<sup>3</sup>-Z-O-A<sup>3</sup>;~~

X<sub>2</sub> represents ~~G<sub>2-3</sub> alkylene, C(O)-A<sup>4</sup> or A<sup>4</sup>-C(O);~~

X<sub>3</sub> represents ~~CH or N;~~

X<sub>4</sub> represents ~~a single bond, O, S, C(O), N(R<sup>23</sup>), CH(R<sup>23</sup>), CH(R<sup>23</sup>)-CH(R<sup>24</sup>) or C(R<sup>23</sup>)=C(R<sup>24</sup>);~~

A<sup>1</sup> represents ~~a single bond or G<sub>1-2</sub> alkylene;~~

A<sup>2</sup> represents ~~a single bond or CH<sub>2</sub>;~~

A<sup>3</sup> represents C<sub>1-3</sub> alkylene;

A<sup>4</sup> represents ~~C(O)~~ or C<sub>1-2</sub> alkylene;

Z represents, at each occurrence, O, S(O)<sub>m</sub> or N(R<sup>26</sup>);

R<sup>2</sup> and R<sup>4</sup> ~~independently represent~~ represents one or more optional substituents selected from C<sub>1-4</sub> alkyl, C<sub>1-4</sub> alkoxy (which latter two groups are optionally substituted by one or more halo substituent), methylenedioxy, halo, hydroxy, cyano, nitro, S(O)<sub>2</sub>NH<sub>2</sub>, C(O)OR<sup>26</sup>, SR<sup>26</sup>, S(O)R<sup>26a</sup>, S(O)<sub>2</sub>R<sup>26a</sup> or N(R<sup>27</sup>)R<sup>28</sup>;

R<sup>3</sup> represents one or more optional substituents selected from OH, C<sub>1-4</sub> alkoxy, C<sub>1-6</sub> alkyl (optionally substituted by one or more halo group), or N(R<sup>29a</sup>)R<sup>29b</sup>;

R<sup>25</sup>, R<sup>29a</sup> and R<sup>29b</sup> independently represent H, C<sub>1-4</sub> alkyl or C(O)R<sup>30</sup>;

R<sup>26</sup> represents H or C<sub>1-4</sub> alkyl;

R<sup>26a</sup> represents C<sub>1-4</sub> alkyl;

R<sup>27</sup> and R<sup>28</sup> independently represent H, C<sub>1-4</sub> alkyl or C(O)R<sup>30</sup>, or together represent C<sub>3-6</sub> alkylene, thus forming a 4- to 7-membered ring, which ring is optionally substituted, on a carbon atom that is α to the nitrogen atom, with an =O group;

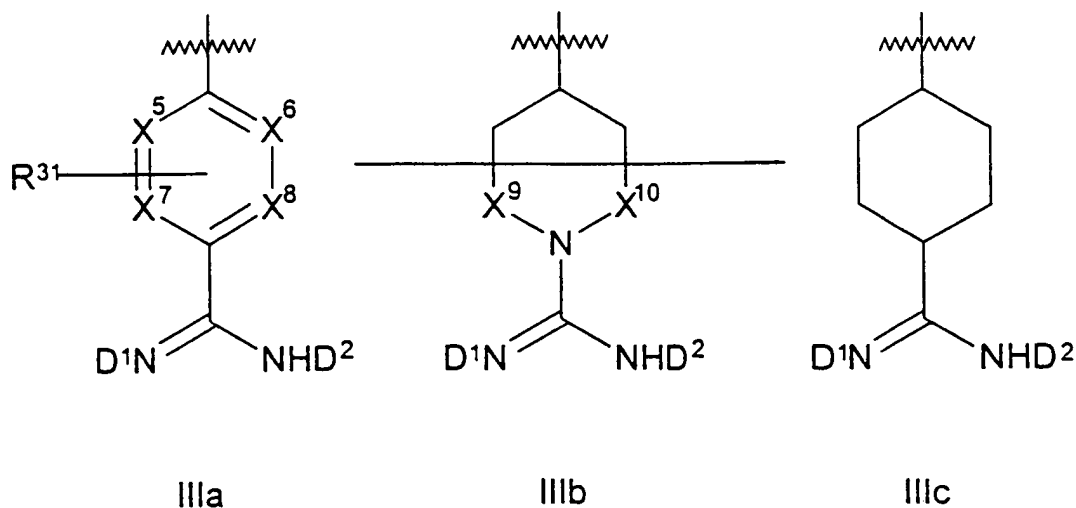
R<sup>21</sup>, R<sup>22</sup>, R<sup>23</sup>, R<sup>24</sup> and R<sup>30</sup> ~~independently represent~~ represents, at each occurrence, H or C<sub>1-4</sub> alkyl;

Y independently represents CH<sub>2</sub>, (CH<sub>2</sub>)<sub>2</sub>, or CH=CH (which latter group is ~~optionally substituted by C<sub>1-4</sub> alkyl~~), ~~(CH<sub>2</sub>)<sub>3</sub>, CH<sub>2</sub>CH=CH or CH=CHCH<sub>2</sub> (which latter three groups are optionally substituted by C<sub>1-4</sub> alkyl, methylene, =O or hydroxy)~~;

R<sup>y</sup> represents H or C<sub>1-4</sub> alkyl;

n represents 0, 1, 2, 3 or 4; and

B represents a structural fragment of formula IIIa, ~~IIIb~~ or IIIc



wherein

$X^5$ ,  $X^6$ ,  $X^7$  and  $X^8$  independently represent  $CH$ ,  $N$  or  $N-O$ ;

$X^9$  and  $X^{10}$  independently represent a single bond or  $CH_2$ ;

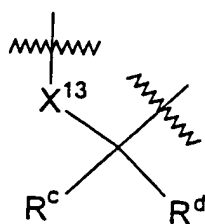
$R^{31}$  represents an optional substituent selected from halo,  $C_{1-4}$  alkyl (which group is optionally substituted by one or more halo group),  $N(R^{32})R^{33}$ ,  $OR^{34}$  or  $SR^{35}$ ;

$R^{32}$  and  $R^{33}$  independently represent  $H$ ,  $C_{1-4}$  alkyl or  $C(O)R^{36}$ ;

$R^{34}$ ,  $R^{35}$  and  $R^{36}$  independently represent  $H$  or  $C_{1-4}$  alkyl; and

one of  $D^1$  and  $D^2$  represents  $H$ , and the other represents  $H$ ,  $OR^a$ ,  $NHR^a$ ,

$C(=X^{11})X^{12}R^b$ , or  $D^1$  and  $D^2$  together represent a structural fragment of formula IVa:-



IVa

$R^a$  represents H or  $-A^5[X^{14}]_n[C(O)]_rR^e$ ;

$R^b$  represents  $-A^5[X^{14}]_n[C(O)]_rR^e$ ;

$A^5$  represents, at each occurrence, a single bond or  $C_{1-12}$  alkylene (which alkylene group is optionally interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group, and is optionally substituted by one or more of halo, OH,  $N(H)C(O)R^g$ ,  $C(O)N(R^g)R^h$ ,  $C_{3-7}$ -cycloalkyl (which cycloalkyl group is optionally interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group and/or is optionally substituted by one or more substituents selected from  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, halo,  $=O$  or  $=S$ ), Het and  $C_{6-10}$  aryl (which aryl and Het groups are themselves optionally substituted by one or more substituents selected from  $C_{1-6}$  alkyl (optionally substituted by one or more halo substituent),  $C_{1-6}$  alkoxy, halo, cyano,  $C(O)OR^g$ ,  $C(O)N(R^g)R^h$  and  $N(R^f)R^g$ );

$R^c$  and  $R^d$  both represent H; or one of  $R^c$  and  $R^d$  represents H or  $C_{1-7}$  alkoxy and the other represents  $C_{1-7}$  alkyl (which alkyl group is optionally interrupted by one or more O atoms); or  $R^c$  and  $R^d$  together represent  $C_{3-8}$  cycloalkyl, which cycloalkyl group is interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group;

$R^e$  represents, at each occurrence, H,  $C_{1-12}$  alkyl (which alkyl group is optionally interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group, and/or is optionally substituted by one or more substituents selected from halo, OH,  $N(H)C(O)R^g$  and  $C(O)N(R^g)R^h$ ),  $A^7$ - $C_{3-7}$ -cycloalkyl (which cycloalkyl group is optionally interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group and/or is substituted by one or more substituents selected from  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy, halo,  $=O$  and  $=S$ ),  $A^7$ - $C_{6-10}$  aryl or  $A^7$ -Het (which aryl and Het groups are optionally substituted by one or more substituents selected from  $C_{1-6}$  alkyl (optionally substituted by one or more halo substituent),  $C_{1-6}$  alkoxy, halo, cyano,

$C(O)OR^g$ ,  $C(O)N(R^g)R^h$  and  $N(R^f)R^g$ ;

$A^7$  represents a single bond or  $C_{1-7}$  alkylene (which alkylene group is optionally interrupted by one or more O,  $S(O)_m$  and/or  $N(R^f)$  group, and/or are optionally substituted by one or more of halo, OH,  $N(H)COR^g$  and  $CON(R^g)R^h$ );

Het represents, at each occurrence, a five- to ten-membered heteroaryl group, which may be aromatic in character, containing one or more nitrogen, oxygen or sulphur atoms in the ring system;

n and r independently represent 0 or 1;

$X^{11}$ ,  $X^{12}$  and  $X^{14}$  independently represent O or S;

$X^{13}$  represents O or  $N(R^f)$ ;

$R^f$  represents, at each occurrence, H,  $C_{1-4}$  alkyl or  $C(O)R^g$ ;

$R^g$  and  $R^h$  independently represent, at each occurrence, H or  $C_{1-4}$  alkyl; and

m represents, at each occurrence, 0, 1 or 2;

or a pharmaceutically acceptable salt thereof;

provided that:

~~(a) A and E do not both represent O or S;~~

~~(b) E and D do not both represent O or S;~~

~~(c) when  $R^1$  represents  $OR^{1d}$  and  $X_4$  represents  $C(O)-Z-A^1$ ,~~

~~$-Z-CH_2-S(O)_m-A^2$  or  $-Z-C(O)-Z-A^2$ , then  $A^1$  or  $A^2$  (as appropriate) do not represent a single bond;~~

~~(f) — when  $X_4$  represents  $-CH(R^{23})-$ ,  $R^1$  does not represent OH;~~

~~(g) — when  $A^5$  represents a single bond, then n and r both represent 0;~~

~~(t) — when  $A^5$  represents  $C_{12}$  alkylene, then n represents 1;~~

(g)——when A<sup>5</sup> represents -CH<sub>2</sub>-, n is 1 and r is 0, then R<sup>e</sup> does not represent H;

and

(h)——the compound is not:-

(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Pro-Pab;

(R)- or (S)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Pro-Pab;

(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab x HOAc;

(R)- or (S)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab;

1-hydroxy-5-methoxytetralin-1-yl-C(O)-Aze-Pab x HOAc;

1-hydroxy-5,7-dimethyltetralin-1-yl-C(O)-Aze-Pab x HOAc;

1-hydroxy-7-aminotetralin-1-yl-C(O)-Aze-Pab x HOAc;

1-hydroxytetralin-1-yl-C(O)-Aze-Pab x HOAc;

7-methoxytetralin-1-yl-C(O)-Aze-Pab x HOAc;

(R)- or (S)-7-methoxy-1-methyltetralin-1-yl-C(O)-Aze-Pab;

4-hydroxy-6-methoxychroman-4-yl-C(O)-Aze-Pab x OAc;

(S)- or (R)-1-hydroxy-4-methoxyindan-1-yl-C(O)-Aze-Pab;

1-hydroxy-5-methoxytetralin-1-yl-C(O)-Aze-Pab(OH);

(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(OH);

4-hydroxy-6-methoxychroman-4-yl-C(O)-Aze-Pab(OH);

4-hydroxy-6-methoxychroman-4-yl-C(O)-Aze-Pab(OMe);

(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab-

(C(O)OCH<sub>2</sub>CCl<sub>3</sub>);

(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab-

(C(O)OCH<sub>2</sub>CH<sub>3</sub>);

7-methoxy-1-allyltetralin-1-yl-C(O)-Aze-Pab x HOAc;  
(S)- or (R)-1-hydroxy-7-chlorotetralin-1-yl-C(O)-Pro-Pab;  
1-*n*-propyl-7-methoxytetralin-1-yl-C(O)-Aze-Pab x HOAc;  
6-chloro-4-hydroxychroman-4-yl-C(O)-Aze-Pab x HOAc;  
4-hydroxychroman-4-yl-C(O)-Aze-Pab x HOAc;  
6,8-dichloro-4-hydroxychroman-4-yl-C(O)-Aze-Pab x HOAc;  
6-fluoro-4-hydroxychroman-4-yl-C(O)-Aze-Pab x HOAc;  
4-hydroxy-6-methylchroman-4-yl-C(O)-Aze-Pab x HOAc;  
8-chloro-4-hydroxy-6-methoxychroman-4-yl-C(O)-Aze-Pab x HOAc;  
6-chloro-4-hydroxy-8-methylchroman-4-yl-C(O)-Aze-Pab x HOAc;  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-C(O)-*i*-Pr);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-C(O)-Et);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-C(O)-Ch);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-allyl);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-Bzl);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab-  
(CO-O-methallyl);  
1-hydroxy-7-aminotetralin-1-yl-C(O)-Aze-Pab(OH);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-Pab(O-Val);  
(S)- or (R)-1-hydroxy-7-methoxytetralin-1-yl-C(O)-Aze-(Me)Pab; or  
9-hydroxyfluoren-9-yl-C(O)-Aze-Pab x HOAc.

2 (previously presented). A compound as claimed in Claim 1 wherein R<sup>1</sup>



represents OH or C<sub>1-4</sub> alkyl (which latter group is optionally substituted by cyano or OH).

3 (cancelled).

4 (currently amended). A compound as claimed in claim 1 wherein, ~~when R<sub>x</sub> represents a structural fragment of formula IIa, then the dotted lines represent bonds, A and E both represent CH and D represents -CH=CH-~~

5 (currently amended). A compound as claimed in claim 1 wherein, ~~when R<sub>x</sub> represents a structural fragment of formula IIa, X<sub>1</sub> optionally unsaturated C<sub>2</sub>- or C<sub>3</sub>-alkylene, or -Z-A<sup>3</sup> (in which Z represents O, S(O)<sub>m</sub> or N(R<sup>25</sup>) (in which R<sup>25</sup> is as defined in Claim 1 or represents C<sub>1-4</sub> alkyl or C(O)R<sup>30</sup> and m and R<sup>30</sup> are as defined in Claim 1) and A<sup>3</sup> represents C<sub>1</sub>- or C<sub>2</sub>-alkylene (which latter group is optionally unsaturated))~~.

6 (currently amended). A compound as claimed in claim 1 wherein Y represents CH<sub>2</sub>, or (CH<sub>2</sub>)<sub>2</sub> ~~or~~ (CH<sub>2</sub>)<sub>3</sub>.

7 (previously presented). A compound as claimed in claim 1 wherein B represents a structural fragment of formula IIIa in which X<sup>5</sup>, X<sup>6</sup>, X<sup>7</sup> and X<sup>8</sup> all represent CH.

8 (previously presented). A compound as claimed in claim 1 wherein, when D<sup>1</sup>

and D<sup>2</sup> together represent a structural fragment of formula IVa, in which X<sup>13</sup> is O, then one of R<sup>c</sup> and R<sup>d</sup> represents H or C<sub>17</sub> alkoxy and the other represents C<sub>1-7</sub> alkyl.

9 (previously presented). A compound as claimed in claim 1, wherein, when D<sup>1</sup> or D<sup>2</sup> represents OR<sup>a</sup> and R<sup>a</sup> represents -A<sup>5</sup>[X<sup>14</sup>]<sub>n</sub>[C(O)]<sub>r</sub> R<sup>e</sup>, and

(i) A<sup>5</sup> is a single bond, then R<sup>e</sup> is:-

(1) A<sup>7</sup>-aryl, optionally substituted by one or more halo, C<sub>1-6</sub> alkoxy, C<sub>1-6</sub> alkyl or halo-C<sub>1-6</sub>-alkyl substituents; or

(2) H or linear, branched, optionally unsaturated, and/or cyclic, C<sub>1-2</sub> alkyl, which cyclic alkyl group is optionally interrupted by an O atom and, optionally, a further O atom or S(O)<sub>m</sub> group; or when

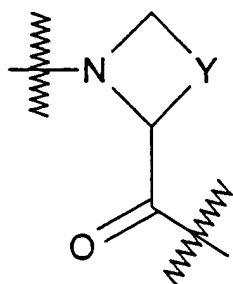
(ii) A<sup>5</sup> is linear or branched C<sub>1-12</sub> alkylene, X<sup>14</sup> is O and r is 0, then R<sup>e</sup> is C<sub>1-3</sub> alkyl or A<sup>7</sup>-aryl, in which A<sup>7</sup> is a single bond.

10 (previously presented). A compound as claimed in claim 1, wherein, when D<sup>1</sup> or D<sup>2</sup> represents OR<sup>a</sup>, then R<sup>a</sup> is H or C<sub>1-4</sub> alkyl.

11 (previously presented). A compound as claimed in claim 1, wherein, when D<sup>1</sup> or D<sup>2</sup> represents -C(=X<sup>11</sup>)X<sup>12</sup>R<sup>b</sup>, in which X<sup>11</sup> represents O and X<sup>12</sup> represents O or S, and, in which R<sup>b</sup> group, A<sup>5</sup> represents a single bond then R<sup>e</sup> represents optionally unsaturated C<sub>1-6</sub> alkyl, A<sup>7</sup>-C<sub>6-10</sub>-aryl (in which A<sup>7</sup> represents a single bond or C<sub>1-2</sub> alkylene, and which A<sup>7</sup>-C<sub>6-10</sub>-aryl group is optionally substituted by one or more halo, C<sub>1-4</sub> alkyl and/or C<sub>1-4</sub> alkoxy groups), or A<sup>7</sup>-C<sub>3-7</sub>-cycloalkyl, in which A<sup>7</sup> represents a

single bond or linear or branched C<sub>1-7</sub> alkylene, and which cycloalkyl group is optionally substituted by C<sub>1-3</sub> alkyl.

12 (previously presented). A compound of formula I, as defined in claim 1, wherein the fragment



is in the S-configuration.

13 (previously presented). A pharmaceutical formulation including a compound as defined in claim 1, or a pharmaceutically acceptable salt thereof, in admixture with a pharmaceutically acceptable adjuvant, diluent or carrier.

14-20 (cancelled).

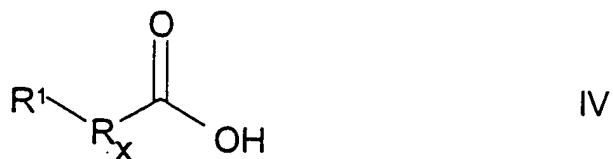
21 (previously presented). A method of treatment of a condition where inhibition of thrombin is required which method comprises administration of a therapeutically effective amount of a compound as defined in claim 1, or a pharmaceutically acceptable salt thereof, to a person suffering from, or susceptible to, such a condition.

22 (previously presented). A method as claimed in Claim 21, wherein the condition is thrombosis.

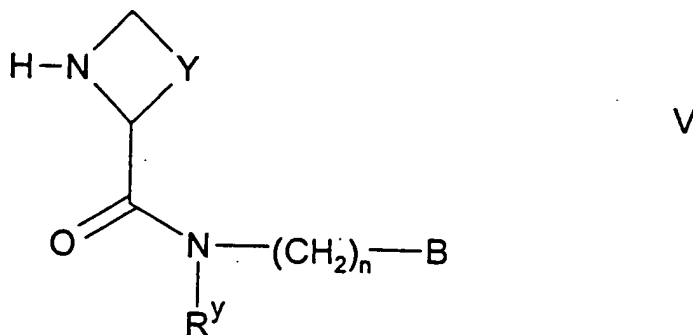
23 (previously presented). A method as claimed in Claim 21, wherein the condition is hypercoagulability in blood and tissues.

24 (currently amended). A process for the preparation of compounds of formula I which comprises:

- (i) the coupling of a compound of formula IV,

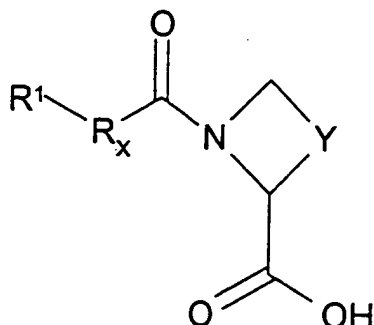


wherein R<sup>1</sup> and R<sub>x</sub> are as defined in Claim 1 with a compound of formula V,



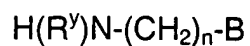
wherein  $R^y$ , Y, n and B are as defined in Claim 1;

(ii) the coupling of a compound of formula VI,



VI

wherein  $R^1$ ,  $R_x$  and Y are as defined in Claim 1 with a compound of formula VII,

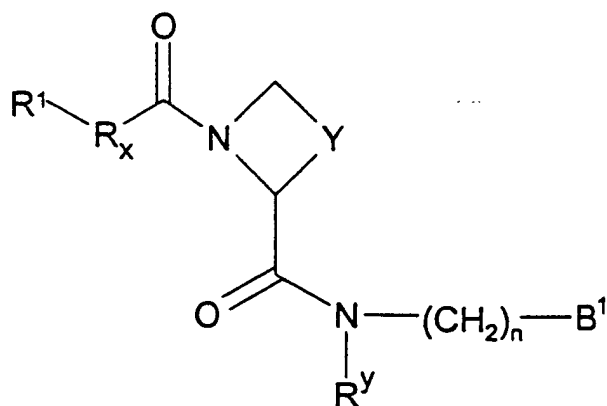


VII

wherein  $R^y$ , n and B are as defined in Claim 1;

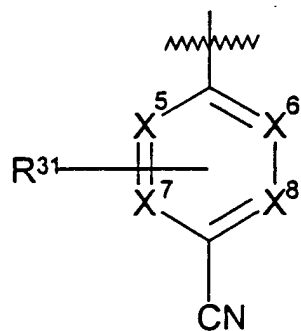
(iii) for compounds of formula I in which  $D^1$  or  $D^2$  represents  $OR^a$  or  $NHR^a$ ,

reaction of a compound of formula VIII,

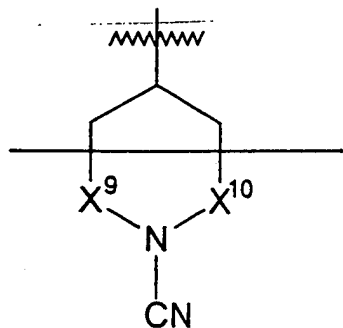


VIII

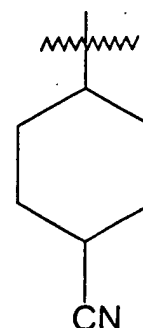
wherein  $B^1$  represents a structural fragment of formula IIIId, ~~IIIe~~ or IIIf



IIIId



IIIIe



IIIIf

and  $R^1$ ,  $R_x$ ,  $Y$ ,  $R^y$ ,  $n$ ,  $R^{31}$ ,  $X^5$ ,  $X^6$ ,  $X^7$ , and  $X^8$ ,  $X^9$  and  $X^{10}$  are as defined in Claim 1 with a compound of formula IX,

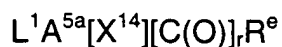


IX

wherein  $X^a$  represents O or NH and  $R^a$  is as defined in Claim 1;

(iv) for compounds of formula I in which  $D^1$  or  $D^2$  represents  $OR^a$  or  $NHR^a$ , reaction of a compound of formula I in which  $D^1$  or  $D^2$  (as appropriate) represents  $C(O)OR^{b1}$ , in which  $R^{b1}$  represents a protecting group with a compound of formula IX as defined above;

(v) for compounds of formula I in which  $D^1$  or  $D^2$  represents  $OR^a$  or  $NHR^a$ ,  $R^a$  represents  $-A^5[X^{14}]_n[C(O)]_rR^e$ , in which  $A^5$  does not represent a single bond, and  $n$  represent 1, reaction of a compound of formula I in which  $D^1$  or  $D^2$  (as appropriate) represents OH or  $NH_2$ , with a compound of formula X,

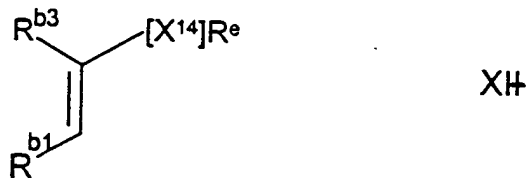


X

wherein  $L^1$  represents a suitable leaving group,  $A^{5a}$  represents  $A^5$ , as defined in Claim 1 except that it does not represent a single bond, and  $X^{14}$ ,  $r$  and  $R^e$  are as defined

in Claim 1;

(vi) for compounds of formula I in which  $D^1$  or  $D^2$  represents  $OR^a$  or  $NHR^a$ ,  $R^a$  represents  $-A^5[X^{14}]_n[C(O)]_rR^e$ , in which  $A^5$  represents  $C_{2-12}$  alkylene, which alkylene group is branched at the carbon atom that is  $\alpha$  to the O or N atom of  $OR^a$  or  $NHR^a$  (as appropriate), and which group is optionally branched at the carbon atom that is  $\beta$  to that atom, n represents 1, r represents 0 and  $R^e$  is as defined in Claim 1, reaction of a compound of formula I in which  $D^1$  or  $D^2$  (as appropriate) represents OH or  $NH_2$ , with a compound of formula XI,



or a geometrical isomer thereof, or a mixture of such geometrical isomers, in which  $R^{b1}$  and  $R^{b3}$  each represent H or an alkyl group, provided that the total number of carbon atoms provided by  $R^{b1}$  and  $R^{b3}$  does not exceed 10, and wherein  $X^{14}$  and  $R^e$  are as defined in Claim 1;

(vii) for compounds of formula I in which  $D^1$  or  $D^2$  represents  $OR^a$  or  $NHR^a$ ,  $R^a$  represents  $-A^5[X^{14}]_n[C(O)]_rR^e$ , in which  $A^5$  represents a single bond, and  $R^e$  represents  $A^7-C_{3-6}$ -cycloalkyl, in which  $A^7$  represents a single bond, and the cycloalkyl group is interrupted by at least one O or S atom, which atom is between the carbon atom at the point of attachment to the O or NH group of  $OR^a$  or  $NHR^a$ , and a carbon atom that is  $\alpha$

to that point of attachment, and which cycloalkyl group is optionally interrupted by one or more O or S(O)<sub>m</sub> group and/or optionally substituted by one or more =O group,  
 reaction of a compound of formula I, in which D<sup>1</sup> or D<sup>2</sup> (as appropriate) represents OH or NH<sub>2</sub>, with a compound of formula XII,



wherein X<sup>15</sup> represents O or S and X<sup>16</sup> represents C<sub>1-4</sub> alkylene (which alkylene group is optionally interrupted by one or more O or S(O)<sub>m</sub> group and/or optionally substituted by one or more =O group);

(viii) for compounds of formula I in which D<sup>1</sup> or D<sup>2</sup> represents C(X<sup>11</sup>)X<sup>12</sup>R<sup>b</sup>,  
 reaction of a compound of formula I in which D<sup>1</sup> and D<sup>2</sup> both represent H with a compound of formula XIII,



wherein L<sup>2</sup> represents a suitable leaving group, and X<sup>11</sup>, X<sup>12</sup> and R<sup>b</sup> are as defined in Claim 1;

(ix) for compounds of formula I in which D<sup>1</sup> and D<sup>2</sup> together represent a structural fragment of formula IVa, reaction of a corresponding compound of formula I in which D<sup>1</sup> or D<sup>2</sup> represents OH or NHR<sup>f</sup> (in which R<sup>f</sup> is as defined in Claim 1), with a compound of formula XV,





wherein  $R^{c1}$  and  $R^{c2}$  both represent  $-OR^{c3}$ , in which  $R^{c3}$  represents  $C_{1-3}$  alkyl, or together represent  $=O$ , and  $R^c$  and  $R^d$  are as defined in Claim 1;

(x) for compounds of formula I in which one or more of  $X^5$ ,  $X^6$ ,  $X^7$  and  $X^8$  represent N-O, oxidation of a corresponding compound of formula I in which  $X^5$ ,  $X^6$ ,  $X^7$  and/or  $X^8$  (as appropriate) represent(s) N; or

(xi) for compounds of formula I in which any one of Z,  $X_1$ ,  $R^2$ ,  $R^4$ ,  $A^5$ ,  $A^7$ ,  $R^c$ ,  $R^d$  and/or  $R^e$  comprises or includes a S(O) or a S(O)<sub>2</sub> group, oxidation of a corresponding compound of formula I (or a compound corresponding to a compound of formula I) wherein Z,  $X_1$ ,  $R^2$ ,  $R^4$ ,  $A^5$ ,  $A^7$ ,  $R^c$ ,  $R^d$  and/or  $R^e$  (as appropriate) comprise(s) or include(s) a S group;

(xii) for compounds of formula I in which  $D^1$  and  $D^2$  both represent H, removal of a  $OR^a$ ,  $NHR^a$  or  $C(=X^{11})X^{12}R^b$  group (in which  $R^a$ ,  $R^b$ ,  $X^{11}$  and  $X^{12}$  are as defined in Claim 1), or removal of a structural fragment of formula IVa as defined in Claim 1, from a corresponding compound of formula I; or

(xiii) introduction and/or interconversion of a substituent on an aromatic and/or non-aromatic, carbocyclic and/or heterocyclic ring in a corresponding compound of formula I.